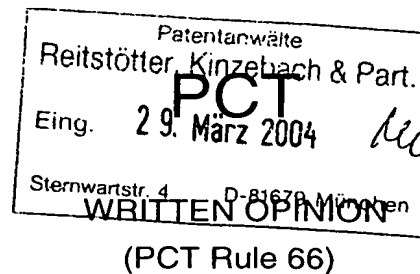


Rec'd PCT/PTO 27 DEC 2004
PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

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ALLEMAGNE



Date of mailing
(day/month/year)

26.03.2004

Applicant's or agent's file reference
M/44212-PCT

REPLY DUE

within 3 month(s)
from the above date of mailing

International application No.
PCT/EP 03/07542

International filing date (day/month/year)
11.07.2003

Priority date (day/month/year)
12.07.2002

International Patent Classification (IPC) or both national classification and IPC
C25B9/08

Applicant
DE NORA ELETTRODI S.P.A. et al.

1. This written opinion is the **first** drawn up by this International Preliminary Examining Authority.

2. This opinion contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

3. The applicant is hereby **invited to reply** to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also: For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.

4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 12.11.2004

Name and mailing address of the international preliminary examining authority:



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Authorized Officer

Mauger, J

Formalities officer (incl. extension of time limits)

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I. Basis of the opinion

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"*):

Description, Pages

1-14 as originally filed

Claims, Numbers

1-21 as originally filed

Drawings, Sheets

1/6-6/6 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
 - ☐ the language of publication of the international application (under Rule 48.3(b)).
 - ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority in written form.
 - ☐ furnished subsequently to this Authority in computer readable form.
 - ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
 - ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.
4. The amendments have resulted in the cancellation of:
- ☐ the description, pages:
 - ☐ the claims, Nos.:
 - ☐ the drawings, sheets:
5. ☐ This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been and will not be examined in respect of:

☐ the entire international application,

☒ claims Nos. 21

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):



☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 21 are so unclear that no meaningful opinion could be formed (*specify*):

see separate sheet

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for the said claims Nos. 21

2. A written opinion cannot be drawn due to the failure of the nucleotide and/or amino acid sequence listing to comply with the Standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the Standard.

☐ the computer readable form has not been furnished or does not comply with the Standard.

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement



Novelty (N)	Claims	1-6, 10,13,14,18-20
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Inventive step (IS)	Claims	1-6 10,12-20
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Industrial applicability (IA)	Claims	
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2. Citations and explanations

see separate sheet

Re Item III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

- 1) Claim 21 defines a cathodic finger "substantially as hereinbefore described". With respect to such a claim it is impossible to determine which combination of technical features the claim intendeds to protect. Thus the claim is vague and unclear (Article 6 PCT). No opinion can be issued for such claims.

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- 1) Reference is made to the following documents:

D1: WO 00 06798 A (ELTECH SYSTEMS CORP) 10 February 2000 (2000-02-10) cited in the application

D2: DE 23 53 583 A (SOLVAY) 9 May 1974 (1974-05-09)

- 2) Document D1 discloses a finger-type cathodic structure for a chlor-alkali electrolysis cell. The structure consists of a finger-shaped mesh structure coated with a diaphragm and an internal support plate which is corrugated and connected to the mesh at the apex of the corrugations. This plate provides mechanical support and an electrical connection (see page 6, line 30 to page 11, line 4; claim 18 and figures 3 and 4).

A corrugated sheet is a sheet provided with projections and thus document D1 is considered to be novelty destroying for the subject-matter of claims 1-6, 10, 13 and 18-20 (Article 33(2)PCT).

- 2.1) Document D2 discloses a finger-type cathodic for a chlor-alkali electrolysis cell. The structures consist of a finger-shaped mesh structure coated with a diaphragm and an internal support plate which has ribs attached to it and is connected to the mesh at the apex of the ribs. The plate also contain an aperture. This plate provides mechanical support and an electrical connection (see page 3, line 6 to page 7, line 22; claims and figures 1 and 2).

The ribs in document D2 are projections and thus this document is novelty destroying for claims 1-6, 10, 13, 14 and 18-20.

2.2) The subject-matter of claims 7-9, 11 define novel subject-matter since neither document D1 nor document D2 discloses the projection structures defined in these claims. Claims 15-17 define novel subject-matter since neither document D1 nor document D2 define methods for manufacturing the support plate. The subject-matter of claim 12 is novel because the documents do not disclose thicknesses for the support plates.

3) The subject-matter of claims 12 and 15-17 are not considered to involve an inventive step. A suitable thickness for the support plate will readily be arrived by a skilled person without inventive step, since the mechanical and electrical requirements for the plates are well known. The manufacturing methods in claims 15-17 are standard methods for making corrugated sheets and/or sheets with ribs and their use implies no inventive step (Article 33(3) PCT).

3.1) The subject-matter of claims 7-9 and 11 is however considered to imply an inventive step.

The problem addressed by these claims is to provide a cathodic finger structure which is mechanically stable, provides a good electrical connection and hinders gas and liquid flows as little as possible.

The caps defined in claims 7-9 and 11 provide an excellent mechanical stability and electrical contact unlike the ribs in document D2. Furthermore they allow a free circulation of gas and liquid unlike the corrugations of document D1. The use of such caps is not suggested in the prior art and thus an inventive step can be recognised for these claims.